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**Addendum**

**Contribution by non-governmental organizations \*\***

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\*\* The views and opinions expressed do not necessarily represent those of the United Nations.

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Identifying relevant networks with appropriate and specific knowledge and editing a globally composed Review Paper was no easy matter. It was drafted by: International Partnership for Sustainable Agriculture (IPSA), The Foodfirst Information and Action Network, (FIAN International), Practical Action, Environment Liaison Centre International (ELCI), Dryland's Coordination Group (DCG), Freshwater Action Network (FAN), Third World Network, (TWN).

Subjecting the Paper to the creative scrutiny and critical analysis of global NGO networks working on the CSD-16/17 themes to improve the content was deliberate policy.

Circulated twice, in October and November on major global list servers and made available to the larger global NGO community for comments and input, close to 25 substantive submissions were made per consultation phase. More than half of these submissions came from large global NGO networks representing all the continents of this globe.

TWN, responsible for collecting, systematising and editing comments and inputs prepared both versions and a final re-edited, third version was circulated to the global community of NGOs early December 2007.

## **I. INTRODUCTION**

1. The issues under consideration by CSD-16 are closely interrelated and difficult to address in isolation. For example, decisions on land management (including agricultural

management) contribute to drought and desertification, while patterns of agricultural development are responsible for water shortages because agriculture is the largest user of water resources. Moreover, the issues of land, drought and desertification are strongly interlinked. Land degradation and drought are contributing factors to desertification, and the priority approaches and strategies identified to address these are also relevant to addressing desertification.

2. Although the issues are discussed separately in this paper, some common threads emerge across the themes, which call for:

- Increased voice and empowerment of the marginalized in decision-making processes, and their increased control over land and water resources;
- Democratic processes that are participatory and inclusive;
- Gender equity and equality;
- Rights-based approaches to development, including the right of peoples and states to determine their own policies that protect food security, environmental quality and livelihoods;
- Policy reform, including a shift to demand-driven policies that meet the needs of the poor;
- National and international policy coherence that implements sustainable development;

- Increased global cooperation on sustainable development, including increased and coordinated investment and funding;
- Cross-sectoral collaboration among donors, governments, communities and civil society actors;
- Management approaches which are based on biodiversity and agroecology, and local knowledge;
- Urgent and concrete action to address climate change;
- Decentralized and democratized energy production;
- Action to tackle current unsustainable patterns of food consumption and production.

3. Importantly, there is a need to focus on root causes of the problems, rather than on symptoms: land management for relatively short-term economic gains by a few people and the failure to make decisions democratically, and in a way that takes into account economic, environmental, ethical and social aspects, are root causes with ripple effects across all the CSD-16 themes. Likewise, climate change poses a direct threat to achieving the Millennium Development Goals (MDGs), including long-term food security, provision of clean water and sanitation, clean air and sustainable development. Its effects are felt across all the CSD-16 themes, for which urgent action and equitable solutions are needed.

## **II. AGRICULTURE**

4. Agriculture that involves sustainable management of land and water resources is key to meeting the targets of the Johannesburg Plan of Implementation (JPOI). Supporting agricultural practices that increase productivity and add value builds more sustainable livelihoods, while building women's agricultural productivity and capacity to receive fair compensation for work leads to greater gender equity.

**A. Concrete NGO action since JPOI**

6. NGOs have gained greater legitimacy in international processes dealing with agriculture, resource management and rural development. For example, a Bureau with equal representation from governments and civil society administers the International Assessment of Agricultural Science & Technology for Development (IAASTD).<sup>1</sup>

7. NGOs have explored new approaches to agricultural development that simultaneously cut across sectors (such as environment and energy), contributed to the generation and extension of agricultural knowledge, and improved access to knowledge and other resources. Food sovereignty has become an overarching concept, articulated by the global peasant movement La Via Campesina. Progress has been made in organizing regionally and globally, emphasizing equity between poor and industrialized nations, and promoting solidarity in international policymaking.<sup>2</sup> The rights-based approach to development focuses on empowering people to demand protection and fulfilment of the full spectrum of their rights.

8. NGOs have pioneered participatory research, planning and evaluation to improve and scale-up good practices and inform policy. The multi-stakeholder SARD Initiative has resulted in collaborative efforts of NGOs with other Major Groups and has documented community efforts to achieve SARD worldwide.<sup>3</sup>

9. Research supported by NGOs has focused on understanding and extending agroecological approaches to food production, and creating and expanding local or regional infrastructures and networks that allow smallholders to add value to crops, gain fair access to markets and receive compensation above the costs of production. Agroecological approaches include organic agriculture<sup>4</sup>, sustainable livestock production, diversified production with higher-value crops, and alternative crops that are water- and energy-efficient, and under local control.

10. Livestock play an important but often neglected role. A priority is documentation of good practices and policy options to address social, environmental, economic, public health, animal health and welfare issues. NGOs promote a people-centred approach, for example, the Kenya Livestock Working Group addresses JPOI challenges related to hunger, land, water and rural development by identifying sustainable livelihood and landscape-scale good practices.<sup>5</sup>

## **B. Constraints and obstacles**

- Climate change and increasing vulnerability of poor populations and those directly dependent on natural resources.

- Water shortages and increasing competition for freshwater. Without water productivity improvements, global water use must increase by 70-90% by 2050 to meet current trends.
- Nutrient imbalances, leading to an increase in dead zones and potentially exacerbated by initiatives such as ocean fertilization.
- Harmful social, health, economic and environmental impacts of the industrial model of agricultural and livestock production, including genetic engineering. There has been insufficient support for local programmes promoting livestock husbandry and health, and insufficient attention to livestock and livestock-based livelihoods.
- Rural-urban migration and impacts on rural areas as well as poor conditions for workers in industrial production systems moving into rural areas.
- Concerns about food quality and rising incidences of diet-related diseases and obesity.
- Increasing corporate concentration and control of value chains without shared benefits to producers and consumers, and treatment of agriculture solely as a market good.
- Failure to internalize social and environmental costs, and harmful impacts of agricultural policies on livelihoods of people dependent on agriculture.
- Negative impacts of multilateral and bilateral trade agreements, especially for the rural and urban poor, small-scale and family-farm sectors in both developing and

developed countries. This includes WTO rules preventing countries from developing their own agricultural and food policies.

- Negative impacts of export subsidies in industrialized countries and dumping products below the cost of production in developing countries, undermining local markets.
- War and conflict over natural resources.
- HIV/AIDS and lack of access to treatment.
- Failure to adopt a human rights framework and strategy for hunger eradication.
- Poverty (inability to make investments that increase productivity and resource use efficiency).

### **C. Priority approaches and strategies**

#### **More equitable sharing of resources and power**

11. Food and fuel sovereignty is the key concept for decision-making about resource use. For example, agrarian reform is successful only if it empowers local communities and includes institutional reform. Technology transfer that involves shared ownership and control, and comprehensive multi-stakeholder assessment of its desirability, can alleviate hunger and poverty. Sharing resources and power requires revision of existing policies and practices of intergovernmental institutions, and resistance to corporate control and concentration.

**Building capacity, particularly at local and regional levels**

12. Improving access to and availability of critical knowledge and resources requires the empowerment of people in local rural communities through training, transparency, new participatory governance mechanisms and partnerships. Capacity to mitigate and adapt to climate change through agriculture is especially urgent, including better early warning systems to monitor food supply and demand, and coordinated response mechanisms. Particular attention should be placed on the development of youth capacity, encouraging youth to engage in social transformation.

**Integration of local, traditional and indigenous knowledge with scientific knowledge**

13. Community-based and indigenous approaches to food production have often been developed to meet local environmental and socio-cultural contexts, and thus are more sustainable. Research must take local knowledge into account and compensate local people fairly for any financial gains that accrue from R&D that uses seeds, breeds or locally generated technology. There should be no biopiracy of genetic resources and associated traditional knowledge, including through patents. Community-based practices, such as switching to drought-resistant varieties and reforestation, are invaluable for climate change adaptation.

**Greater attention to food quality, health and preserving traditional foods**

14. The Slow Food movement and anti-Genetic Engineering campaigns worldwide are reactions to mass-produced and mass-marketed food with low nutrient value and lack of traditional value. They recognize the cultural significance of food and the importance of traditional foodways to safeguarding health. This is in contrast to corporate, governmental and non-governmental entities promoting GMOs in many countries and undermining food sovereignty and food security. Preferential purchase of Fair Trade and local products at consumer and institutional level supports small-scale producers and local agricultural landscapes with their multiple roles, while facilitating shifts to more culturally-appropriate and healthy choices.

**Greater attention to agroecological approaches, diversifying agricultural production and protecting agricultural biodiversity, biodiversity and ecosystem services**

15. Agroecological approaches to pest control, fertility management, energy production and water management can provide sustainable ecosystem services. These must meet landowner and community goals, and are often enabled by holistic management.<sup>6</sup> On-farm energy generation and nutrient provision by recycling livestock manure are more efficient and less likely to cause negative externalities than centralized industrial models using synthetic fertilizers. Paying producers to provide ecosystem services and protect biodiversity through agriculture can improve rural livelihoods while protecting the commons.

**D. Mobilizing further action****Collaboration in planning, information, assessment and governance**

16. This includes fostering connections across sectors, scales and interest groups not previously involved in agricultural practice and policy (e.g., health, labour, women), as well as shared governance mechanisms at local and regional levels, such as food policy councils.

**Development of reliable, credible sources of information**

17. An evidence base of approaches that work, with ensured widespread access, is necessary, including establishing an international agricultural technology assessment body with multi-stakeholder representation, and developing and using sustainable development indicators.

**Scaling-up exemplary models of sustainable agriculture, trade and rural development**

18. Fair Trade or other systems ensure fair prices and wages for farmers and farmworkers, environmentally sound practices and innovative value chains that redistribute profits more equitably. It is important to recognize successes, and learn from mistakes, as well as identify alternative enterprises that can supplement agricultural income.

**Advocacy to promote greater public investment in agricultural development**

19. This should emphasize rights-based approaches, capacity-building, participatory approaches, empowerment of local communities, and realization of the right to food. Promoting antitrust measures, increased competition and greater transparency in corporate practices can resist increasing market concentration.

**Reform of agricultural and resource control policies**

20. Policies that undermine food sovereignty, provide perverse incentives to degrade resources or exacerbate climate change, promote genetic engineering, and discriminate against women or other vulnerable people need to be reformed.

**III. LAND****A. Constraints****Increasing conflicts over land and natural resources**

21. Over three billion people live in rural areas, many of whom are increasingly and violently expelled from their lands and alienated from their sources of livelihood. Mega-development projects such as large dams, infrastructure projects, extractive industries, and tourism have forcibly displaced

local populations, and destroyed their social fabric and the resource bases on which they depend. The current agrofuel boom is likely to exacerbate existing problems such as forced evictions, landlessness and land concentration and degradation. Conflicts over land and natural resources will more likely increase with climate change.

### **Policies of hunger and poverty**

22. A mix of national policies and international framework conditions are responsible for driving peasant and indigenous communities to economic destitution. Noteworthy are the processes of deregulation and privatization of land ownership which have led to a re-concentration of land ownership; the dismantling of rural public services and those that supported production and marketing by small and medium producers; the fostering of capital-intensive and technologically-advanced agro-exportation; and the liberalization of agricultural trade and policies of food security based on international trade.

### **B. Obstacles**

23. Leaders of rural movements involved in conflicts over land and natural resources often face political persecution, harassment, death threats, and killings. The right to organize collectively is difficult to exercise in many countries. Arbitrary detentions and killings of social movements' leaders take place regularly. In many rural areas of the world, smallholder peasants are unable to obtain access to justice. Even if this is possible, court procedures are often too

slow to provide timely justice. Limited access to justice and the political power wielded by those responsible for human rights violations against rural people often result in impunity for such crimes.

24. Most of the armed conflicts today are fought in rural areas. These conflicts often displace people and communities from their traditional lands, occupation, and territories. Paramilitary groups and private security forces, which protect the interests of the powerful, are increasingly used in armed conflicts against civilians. Apart from loss of life and security of peasant families, there are widespread and equally devastating impacts, which prevent rural families from earning an income.

### **C. Priority approaches and strategies**

#### **Food sovereignty and the right to adequate food**

25. The use of natural resources should primarily be for food production. New agrarian reform must recognize the socio-environmental functions of land, the sea, and natural resources in the context of food sovereignty. Food sovereignty is based on the human rights to food, to self-determination, on indigenous rights to territory, and implies policies of redistribution, equitable access and control over natural and productive resources, by rural women, peasants, indigenous peoples, artisanal fisherfolk, rural workers, unemployed workers, pastoralists, discriminated communities such as the Dalit, and other rural communities; rural development

policies based on sustainable land management, agroecological strategies centred on peasant and family agricultural and artisanal fishing; trade policies against dumping and in favour of livestock-based livelihoods and peasant and indigenous production for local, regional and national markets; and complementary public sector policies like health care, education and infrastructure for the countryside.

26. Access to land is part of the right to adequate food and housing. It is critical that land and agrarian reform policies are adopted within a human rights framework aimed at hunger eradication. Legal instruments such as the UN General Comment N° 4 on the right to adequate housing, N° 7 on forced evictions, N° 12 on the right to adequate food and the FAO Voluntary Guidelines to Support the Progressive Realisation of the Right to Adequate Food in the Context of National Food Security provide guidance on how to implement a human rights approach to land issues.

27. Agrarian reform can put an end to the massive and forced rural exodus to the city; would help provide a life with dignity for all; would lead toward a more broad-based and inclusive local, regional and national economic development that benefits the majority; and could put an end to unsustainable practices of intensive monoculture and industrial fishing. Agrarian reform is not just needed in the so-called “developing countries”, but also in Northern, so-called "developed" countries. The State must play a strong role in policies of agrarian reform and food production in order to guarantee the rights of different rural communities.

**Recognition of the concept of territory**

28. The concept of territory has been historically excluded from agrarian reform policies. No agrarian reform is acceptable if it only aims at the distribution of land. The new agrarian reform must include the cosmovisions of territory of communities of peasants, the landless, indigenous peoples, rural workers, fisherfolk, nomadic pastoralists, tribes, afrodescendents, ethnic minorities, and displaced peoples, who produce food and who maintain a relationship of respect and harmony with the Earth, including the oceans. All peoples have the right to maintain their own spiritual and material relationships to their lands; to possess, develop, control, and reconstruct their social structures; to politically and socially administer their lands and territories, including their full environment, the air, water, seas, ice floes, flora, fauna and other resources that they have traditionally possessed, occupied and/or utilized.

**Gender equity to bring about genuine agrarian reform**

29. The fundamental role of women in agriculture and fishing, and in the use and management of natural resources must be recognized. Women should have full equality of opportunities and rights to land and natural resources that recognize their diversity; past discrimination should be redressed. Redistributive agrarian reforms should be implemented to allow women access to and jurisdiction over land and natural resources and guarantee the representation of women in the decision-making mechanisms at all levels.

## **D. How to mobilise further action**

### **Social mobilization as a strategy of struggle and construction of proposals**

30. Direct actions of peaceful land occupation and the recuperation and active defence of land, territories, seeds, forests, fishing grounds, housing, etc., are necessary and legitimate to move governments to fulfil their human rights obligations and to implement effective policies and programmes of agrarian reform. Without the mobilization and full participation of social movements, there will be no genuine agrarian reform.

31. Food sovereignty is not just a vision but is also a common platform of struggle that allows rural and urban social movements to keep building unity in diversity. It is necessary to build alliances with other sectors of society. For examples, youth can play an important role in social change when their capacity is developed, through education that builds an understanding of human rights, gender equality, sustainable development and the various facets of ethical behaviour.

## **IV. RURAL DEVELOPMENT**

32. Seventy-five percent of the poor live in rural areas and depend directly or indirectly on agriculture for their livelihoods. Most are small-scale women farmers whose major role in

agriculture and interests in rural development are generally unrecognised. In recent years, economic globalisation has translated into a narrow understanding of rural development in terms of economic development, market liberalisation and markets for export, which neglect important social, political and cultural dimensions and values that are the essence of rural lives and livelihoods, and that offer alternatives to end rural poverty.

#### **A. Constraints and obstacles**

##### **Supply-driven rural development policies**

33. Rural economies are based on a combination of subsistence and productive activities complemented by short- and medium-term strategies such as migration and paid labour. These are often indicators of exclusionary development processes that force the most vulnerable to look for alternatives elsewhere and do not necessarily translate into poverty reduction. This is because rural development policies are supply-driven, show limited interlinkages with poverty, hunger and trade policies, and lack cross-sectoral co-ordination.

##### **Degradation of ecosystems**

34. The poor and their livelihoods depend directly on biodiversity and ecosystem services. Yet, environmental degradation of fragile, marginal lands directly threatens the livelihoods of 250 million people, while a further 1 billion are at risk. This is enhancing risks and

vulnerabilities of rural communities as well as reducing their adaptive capacities in view of climate change.

### **Poor farmers lack control and access to land and water resources**

35. Land and water resources management are essential for rural development. However, legislation to ensure access to and control of land by peasant farmers is not properly reflected in agricultural and rural development policies and strategies. Gender imbalances in land ownership remain unresolved. Processes of land reform, land restitution and redistribution are complex, slow to implement and subject to biases that generally benefit the powerful.

### **Prevalence of commodity food production**

36. There is increased support for commodity food production for export. This may increase efficiency and competitiveness of certain sectors but is not necessarily focused on the livelihoods and needs of the rural poor. Similarly, aid focusing on market development without addressing poverty exacerbates existing inequalities. Production models that specialise in a limited number of export crops may reduce the resilience of food producers to future adverse conditions and could impact food security negatively.

### **Extension services not reaching the neediest**

37. The privatisation of agricultural extension services, particularly veterinary services, has failed to improve services for poor and remote farmers. Studies on the impacts indicate that farmers have to pay more, coverage is limited since service provision to remoter areas is often not profitable, and the smallest farmers, mainly women, have no access to extension services.

### **Rural infrastructure options not addressing urgent needs**

38. While energy is recognised as critical to overcome rural poverty, governments seem to prioritise investments in grid electrification only. Although there may be scope to develop and extend electricity grids in developing countries, poor and dispersed rural communities rarely benefit from investments targeted to conventional energy options. Similar arguments apply to access to water supply for domestic and productive uses, and appropriate forms of transport.

### **Agrofuels development may impose trade-offs**

39. There is growing interest in biofuels development to assist rural development and reduce greenhouse gas emissions. In practice, biofuels development controlled by agribusinesses, also known as agrofuels, is taking precedence, and lacks a thorough analysis of agroecological and socio-economic conditions. Global evidence is emerging on key trade-offs for access and control of natural resources that may affect the livelihoods of the poor, land rights and water use. Current biofuels produced in temperate zones can only deliver modest greenhouse gas savings, and at great expense of land, with implications for food prices,

biodiversity, water pollution, etc. Biofuels produced in the tropics have variable net impact, but several (such as palm oil) inevitably involve the destruction of tropical forests. The land use changes driven by biofuels production must be taken into consideration.

### **Uneven financial allocations and funding**

40. There have been recent signs at national and international levels given attention to rural development and agriculture, involving increased allocation of funding and investments. NEPAD's Comprehensive Africa Agriculture Development Programme committed 10% of the national budgets for SARD. Some countries such as Kenya have developed plans focusing on community empowerment, decentralised management and enabling policies, but need concrete funding for implementation. Conversely, many Country Support Strategies of ACP countries allocate small percentages to food security and rural development.

### **Slow mainstreaming of climate change**

41. Climate change increases vulnerability of ecosystems, livelihoods and basic infrastructure. Production systems favoured by current rural development may be hardly affected if considerations related to climate change and adaptation are not internalised on time.

### **International trade priorities direct local markets and rural development**

42. There is a growing market for export of raw natural resources due to China's development and efforts to increase market access, such as the EU's Economic Partnership Agreements (EPAs). Both trends will affect rural development, opportunities for governments to promote diversification of livelihoods, national manufacturing capacities, and ability to protect local and regional markets from unfair and stronger competition.

### **Rural voices unheard at policy and decision-making levels**

43. Participation and voice of rural communities in sustainable rural development are still missing from policies and decision-making processes.

## **B. Priority approaches and strategies**

### **Demand-driven rural development policies**

44. Community-driven development based on participatory prioritisation and decision-making, and resources management, can strengthen social capital and contribute to rural poverty reduction. Demand-driven rural development policies and interventions could also facilitate the sustainable use of water, land, forest and fisheries resources and maintain biodiversity.

### **Ensuring farmers' control of land and water resources**

45. Some countries such as Ethiopia have taken measures to ensure inheritance land rights for both women and men which would require support for improved institutions, capacities and outreach activities. Stronger political will is needed to ensure the implementation of internationally agreed approaches such as the FAO Guidelines on the Right to Food. Water resources management should be applied comprehensively and inclusively to address conflicting water uses and demands emerging especially from irrigated agriculture.

#### **Extension services should reach the neediest**

46. Special programmes for remote and arid areas such as the ASAL Programme in Kenya and the integration of non-farm options are good examples. Community-based extension that revalorises and supports traditional knowledge systems and networks, with training of local farmer-to-farmer extension agents, is an alternative for the most vulnerable.

#### **Appropriate infrastructure and energy options**

47. Locally-managed decentralised energy systems can benefit rural areas and should be considered alongside grid options. Likewise, specific strategies on biomass and household energy are urgently needed. While small-scale locally-controlled biofuel production could be an energy option for rural communities, comprehensive and inclusive risk and impact assessments are needed for larger-scale agrofuel production.

**Mainstreaming climate change**

48. Rural development needs to promote increased adaptive capacity to reduce vulnerability and increase resilience of rural communities. National Adaptation Plans of Action (NAPAs) and climate change strategies need to be internalised within rural development strategies. In vulnerable countries, climate data should be analyzed and made available to local farmers on a yearly basis to allow appropriate planning, and integrated into national policy frameworks.

**Reorientating international trade priorities**

49. Operationalising the principles of food sovereignty may provide countries with a different range of strategies to support pro-poor rural development in international trade considerations.

**Giving voice to the rural poor**

50. Integrating participatory mechanisms into infrastructure and market development such as participatory market chain analysis and participatory technology development (PTD) can promote technological choices by farmers, facilitate their innovations, and raise the confidence of the poor and marginalised to participate in planning.

## **V. DROUGHT**

51. Drought is a normal, recurrent feature of climate. It occurs almost everywhere, although its features vary from region to region. Defining drought is therefore difficult; it depends on differences in regions, needs, and disciplinary perspectives. A drought is an extended period of months or years when a region experiences a serious water deficiency. Generally, this occurs when a region receives consistently much lower precipitation than average. Although droughts can persist for several years, even a short, intense drought can cause significant damage and harm to the ecosystem and local economy, particularly in pastoral areas.

52. From 1991 to 2000, drought was responsible for over 280,000 deaths and cost tens of millions of US dollars in damage. By the year 2025, the population projected to be living in water-scarce countries will rise to between 1.0 billion and 2.4 billion, representing roughly 13 to 20% of the projected global population. Africa and parts of western Asia appear to be particularly vulnerable.

53. Having adequate drought mitigation strategies in place can greatly reduce the impact. Recurring or long-term drought can result in desertification. Recurring droughts in the Horn of Africa have created grave ecological catastrophes, prompting massive food shortages. This has been exacerbated by the weakening of traditional pastoral institutions.

### **A. Consequences**

54. Some climate models indicate that rainfall variability is likely to increase, pointing to more frequent and intense droughts. Whether drought results in an emergency depends on its impact on a given population. This, in turn, depends upon the vulnerability of a population's food production and, more generally, livelihood systems, and how capable and prepared they are to cope with climate variability.

55. Drought, combined with low economic development, is a common scenario in drylands. The economies of many African countries still rely heavily on agriculture and pastoralism. Any disruption to the agricultural/pastoral economy can cause shocks that echo throughout the system. They affect markets and pricing structures. In the medium-term they can adversely affect the balance of payments. National economies can be sent into recession and even low levels of development are subsequently affected. The resultant food insecurity becomes difficult to deal with and further droughts worsen the problem. Therefore, factors other than drought must be considered when looking at the causes and consequences of climate variability, particularly in developing countries.

56. Drought is a major cause of food insecurity but the political climate, national and regional agricultural and rural development policies and practices, the state of watershed management, as well as health and nutrition issues etc., influence whether drought triggers a crisis.

57. The problem is even more complex because it is not just a question of lack of food but rather 'food entitlements' which need to be addressed; in other words, the lack of capabilities, such as income, which allow one to produce or acquire available food. There are many factors that affect capabilities, for example a deterioration in the quantity and/or quality of potential labour due to HIV/AIDS. Even if labour is available it may not be allocated to food production, as it may be more attractive at the household level to exit the rural economy for other opportunities. This could be due to artificially low food prices caused by the import of subsidized staples from developed countries. The process selectively removes the most capable people from the rural economy but may improve social safety nets through remittances and income diversification. Those populations who are more vulnerable to the impacts of drought will be disproportionately affected by them. A drought mitigation strategy, therefore, must identify the most vulnerable groups, determine the reasons for their vulnerability, distinguish between those factors that can be addressed in the short-, medium- and long-term, and integrate action into the broader development agenda.

58. In 2005, parts of the Amazon basin experienced the worst drought in 100 years. Research shows that the forest in its present form could survive only three years of drought. This, coupled with the effects of deforestation on regional climate, are pushing the rainforest towards a "tipping point" where it would irreversibly start to die, with catastrophic consequences for the world's climate.

59. Periods of drought can have significant environmental, economic and social consequences:

- Sick and dead livestock
- Reduced crop yields
- Wildfires
- Desertification
- Dust storms, when drought hits an area suffering from desertification and erosion
- Malnutrition, dehydration and related diseases
- Famine due to lack of water for irrigation
- Social unrest
- Mass migration, resulting in internal displacement and international refugees
- War over natural resources, including water and food
- Reduced electricity production due to insufficient available coolant
- Increased incidence of snakebites

60. The effect varies according to vulnerability. Subsistence farmers and pastoral communities are more likely to migrate during drought because they do not have alternative food and fodder sources. Areas with subsistence farmers and pastoralists are more vulnerable to drought-triggered famine. Drought is rarely, if ever, the sole cause of famine; socio-political factors such as extreme widespread poverty play a major role. Drought can also reduce water quality, because lower water flows reduce dilution of pollutants and increase contamination of remaining water sources.

**B. Drought mitigation strategies**

61. The scope for mitigating the impact of drought is situation- and scale-specific. Drought affects both developing and developed countries, but the capacities to mitigate the effects differ considerably. Developed countries can invest in systems to mitigate drought and have strong institutional frameworks that effectively provide collective insurance to cope with drought. The majority of the population have livelihoods that do not depend directly upon the amount of rainfall or the short-term state of the environment. Furthermore, the relative wealth of the urban economy allows for the subsidization of the rural population when necessary. In developing countries this is rarely the case; a large percentage of dryland populations depend directly on the often-degraded natural resource base and typically lack alternatives and/or have limited social safety nets to ensure food security.

62. Following are some strategies to reduce impacts of drought:

- **Drought monitoring and information** - Continuous observation of rainfall levels and comparisons with current usage levels can help prevent man-made drought. Careful monitoring of moisture levels can also help predict increased risk of wildfires. This information must be effectively conveyed to the local population.
- **Land use** - Carefully planned crop rotation can help minimize erosion and allow farmers to plant less water-dependant crops in drier years.

- **Conservation agriculture** - Managing greenwater in rainfed areas.
- **Rainwater harvesting** - Collection and storage of rainwater from roofs or other suitable catchments.
- **Recycling water** - Former wastewater (sewage) that has been treated and purified for reuse.
- **Water restrictions** - Water use may be regulated (particularly outdoors) along with the fitting of water conservation devices inside the home.
- **Cloud seeding** - An artificial technique to induce rainfall.

63. Additionally, it is crucial that the United Nations Convention to Combat Desertification (UNCCD) is implemented (see next section). This is the main international legal instrument to address land degradation, drought and desertification.

## **VI. DESERTIFICATION**

64. Desertification is described as “land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities” or as “the reduction or loss of biological or economic productivity of drylands”<sup>7</sup>. Desertification or land degradation is both an environmental and development problem, which directly affects an estimated 250 million people worldwide.

65. Climate change is hitting the most vulnerable populations hardest, including farmers, agro-pastoral and pastoral people who inhabit some of the driest areas in the world. Emphasis needs to be placed on exploring what this implies in terms of impacts/vulnerability and what adaptation in the drylands means for different sectors and how to build resilience. International mechanisms relating to adaptation are important, along with other development imperatives such as poverty reduction and disaster risk reduction.

#### **A. Constraints**

66. Desertification is not widely known and is usually misunderstood as the spreading of deserts either through natural or human causes and as a phenomenon that only occurs in desert areas. Such an understanding is very limited and tends to highlight the natural aspects of the problem and lessen its human causes and consequences. The misunderstanding also leads to difficulties in measuring its extent and impacts.

67. There is a clear lack of investment by governments and donors in dryland areas as they are perceived as poor in biodiversity and usually inhabited by poor, marginalized people. The contribution of drylands in terms of the national economy is similarly poorly understood. Moreover, desertification has long been misunderstood as a purely Southern problem. The consequences of climate change and an increase in migration from dryland areas of Africa to European countries has nevertheless forced Northern governments to recognize the effects of

desertification. Data is needed to show Northern governments and donors what the consequences of desertification are in terms of the security and economy of their countries.

## **B. Obstacles**

68. Increasing climate instability will make rural people more vulnerable in terms of food production, shelter, and water access, and will also make development activities more challenging. Data gathered on dryland areas may already be obsolete and new aspects of the situation necessitate a reconsideration of development and emergency plans. Climate change is thus a major obstacle to implementing Agenda 21 and reaching the MDGs.

## **C. Priority approaches and strategies**

### **Demonstrating the importance of drylands**

69. There is a need to demonstrate the value and importance of drylands in economic, environmental, social, cultural, and political terms. Data must be obtained and provided to decision makers on the wealth of drylands, for example in terms of agricultural and livestock production, tourism, etc.<sup>8</sup> The environmental services of drylands need to be adequately valued and their importance in terms of biodiversity recognized. Livestock keepers' rights and the roles of pastoralists also need to be respected and adequately valued.

### **Addressing degradation of drylands**

70. The role of desertification in climate change as well as the consequences of climate change on drylands must be seriously considered and acted upon. Land degradation's role in increasing conflicts between agriculturalists and pastoralists needs to be acknowledged. Access to land and ownership of natural resources must be assured, securing local control of vital livelihood factors. The marginalization of dryland peoples must be addressed. Finally, the costs of not preventing degradation in drylands, i.e. of inaction, need to be fully evaluated<sup>9</sup>.

### **Collaborative efforts in projects and financing**

71. Increased collaboration between all actors involved in development projects in drylands, combined with increased investment will enable land degradation to be fought efficiently. Mapping these different actors and their activities and tracking the flow of funds invested in dryland areas and activities to combat desertification is a first step. The Paris Declaration on aid effectiveness should be used to pressure governments of affected countries to mainstream desertification into national development plans and to substantially increase investments.

### **Strengthening local capacities**

72. Due to increased climate variability, activities should focus on strengthening local adaptive capacities including the use of traditional knowledge, and supporting pastoralist

lifestyles which are adapted to harsh environments, and which often consist of local solutions for reversing land degradation. Other approaches include allowing for the natural regeneration of tree species by local farmers, adopting integrated crop production systems (including with crops adapted to drylands), creating a market for sustainable and fair trade dryland products, developing microcredit programmes especially targeted at women, increasing efficient utilisation of water, and adopting a rights-based approach to the issue of access to food, land, and water. Decentralisation policies and land rights also need to be properly addressed.

### **Implementing international obligations**

73. The UNCCD, as the main international legal instrument to address land degradation, drought and desertification, needs to be implemented. It is already in force and ratified by 190 countries, and is an opportunity for governments to adopt reforms.

#### **D. Mobilizing further action**

74. The issue of desertification has been relatively ignored and seen in isolation. Investments in drylands activities such as water and land management, pastoralist development initiatives, and protection of savannah ecosystems have been low and scattered. Awareness-raising and information work is crucial, while engaging governments and donors on the issue. Civil society, farmers', pastoralists' and women's organizations should coordinate efforts and put sufficient political pressure on regional and national authorities.

75. There is a clear risk that the strong demand for extraordinary efforts to combat CO<sub>2</sub> emissions due to the destruction of forests and wetlands may divert most available funds for land and ecosystem management towards humid forests, and thus further reduce available resources for drylands management and development activities in arid and semi-arid regions.

76. In terms of the UNCCD, more action could be mobilized around the implementation of the new ten-year strategic plan. CSD-16 and CSD-17 are an opportunity for civil society to unite efforts and work on activities that cross-cut the Rio Conventions. The concerns around climate change could be used to increase focus on and interest in activities to combat desertification as this takes place in areas where people are very vulnerable to climate change. Improved technologies and best practices such as solar electrification are interesting investments both with regard to development in dryland areas and climate change mitigation.

77. More engagement in the issue requires a change in the way people understand and view desertification and drylands. This can be accomplished by publicizing success stories and best practices, especially those that stem from people living and working in drylands.

## **VII. WATER AND SANITATION**

### **A. Evaluation of progress**

78. There is a global ‘water and sanitation crisis’<sup>10</sup> affecting the most vulnerable people in society, particularly women and children. The JPOI prioritizes water for basic human needs, yet available water resources continue to decline from excessive withdrawal of surface and ground waters and pollution, coupled with decreased precipitation and increased evaporation from a changing climate.<sup>11</sup> Globally, the quantity and quality of available drinking water is deteriorating. By 2025, UN-Water predicts that 1.8 billion people will be living in regions of water scarcity and two-thirds of the global population will be living in regions with water stress.<sup>12</sup> This will impact all aspects of society and is especially pertinent when discussing agriculture, which uses 80% of available water resources.

79. Progress on sanitation is severely lagging. The international target of halving the proportion of people without access to sanitation by 2015 will not be met: 74 countries worldwide are off-track and the target will not be met in Sub-Saharan Africa until at least 2076.

80. Although there has been global progress on access to drinking water, the WHO/UNICEF Joint Monitoring Project 2006 reports that this trend appears to be deteriorating and there are stark regional variations. Coverage rates in sub-Saharan Africa are the lowest, at an estimated 56% of the population<sup>13</sup>. Provision of urban water and sanitation to poor people is problematic due to population density, pollution, land tenure and complex institutional frameworks.

## **B. Constraints and obstacles**

### **Chronic underinvestment and political neglect**

81. The water and sanitation sector suffers from chronic underinvestment and low political prioritization. Investment has failed to keep up with overall rises in aid and the sector is inadequately recognized as fundamental for the achievement of the MDGs, particularly health and education.<sup>14</sup> In Mali, for example, the 2005/6 aid budget for health was nearly double that for water<sup>15</sup> and in Malawi, the health budget was 15 times greater than for the water sector. Moreover, donors are not prioritizing the poorest nations. Of the top ten recipients of aid to the sector in 2005 only two, Bangladesh and Nigeria, were low income countries.

### **Poor international coordination**

82. International collective responsibility and coordinated action needs further strengthening. UN-Water is a step towards a more coherent approach. The EU-Water Initiative provides a platform for donor cohesion within the EU, although its impact has been less significant due to low political will. WHO's global annual monitoring report is a positive step but it is essential that this is not just a one-off exercise and its findings are used to drive real change.

### **Low priority at national level**

83. Developing country governments have a key role to play in accelerating progress. National public spending on water and sanitation typically represents less than 0.5% of GDP<sup>16</sup>. Although water and sanitation is beginning to feature in Poverty Reduction Strategies this does not necessarily translate into national budgets<sup>17</sup>, which in turn do not necessarily translate into effective spending.

#### **Weak accountability to the poor**

84. Water and sanitation are consistently prioritized by poor people in participatory poverty assessments, yet the response from donors and national governments has been weak. Many countries suffer from a breakdown or underdevelopment of social contracts between the state and citizens, leading to an accountability gap, which allows corruption to persist.

#### **Lack of attention to sanitation**

85. The Global Water Partnership estimated in 2000 that only \$1 billion was being spent in developing countries on sanitation compared with \$13 billion on water<sup>18</sup>. Sanitation is in crisis because of an absence of political will at both the national and global levels. The sector is a shambles – responsibility for sanitation is often shared across government departments unable to make a coherent case for addressing sanitation needs.

86. Other barriers to progress are inaccurate information to assess the scale of needs, confusion over which approaches to follow and underestimation of behavioural changes needed. There is a limited perception of sanitation as the provision of toilet facilities only. Resources should be targeted at addressing key barriers rather than spent on subsidised latrine-building.

### **Constraints in technology choices**

87. A further obstruction to progress refers to the limited choice, availability, adequacy, control and standards of technologies promoted as part of the prevalent delivery-oriented and private sector policy approach.

### **Insufficient attention to operationalising water resources management**

88. Implementation of National Integrated Water Resources Management (IWRM) policies is constrained by significant institutional, scientific and behavioural barriers to integration, while politicians are struggling with the technocratic nature of IWRM.

## **C. Priority approaches and strategies**

### **Investing in water and sanitation**

89. The 2006 UNDP Human Development Report estimates that the sector needs a doubling of international aid, and that donors need to rebalance their investments across the sectors to mainstream water, sanitation and hygiene into health, education, urban, rural and other relevant development strategies. Governments should have integrated investment strategies for essential services that recognize the inter-relatedness of health, education, water and sanitation. Aid should be targeted to the countries most in need, and donors should work with governments to ensure that all national plans for water and for sanitation are fully funded.

90. Given that most of the investments in the sector are made by the International Financial Institution, these should always be informed by comprehensive Poverty and Social Impact Assessments.

### **Strengthening international coordination**

91. Initiatives such as UN-Water, the EU-Water Initiative and the WHO's global annual monitoring report need proper financial support, and a clear objective that may be delivered against. Existing initiatives should be effectively networked to make best use of limited resources. A global action plan for water and sanitation, setting out a comprehensive strategy for ensuring progress and monitored by one global task force, merits serious consideration.

### **Policy coherence at national level**

92. At the country level, the ministry responsible for water and sanitation needs to lead the development of an investment plan and move towards a sector-wide approach. Donor coordination is strengthened through such efforts and there are some excellent examples from Bangladesh, Uganda and Tanzania. Given the trend towards administrative decentralization and the increased role of local governments in water management and sanitation services, lessons from local government campaigns should be internalized and strengthened<sup>19</sup>.

### **Accountability to the poor**

93. Poor people need the space and mechanisms that will allow them to hold their governments and service providers to account. Governments and service providers must be accountable to the people they serve, especially the poor. NGOs have a valuable role to play in empowering civil society through capacity building, supporting citizens' engagement in ongoing dialogue, planning, decision-making and negotiation.

94. The Right to Water & Sanitation has been set out in General Comment 15 to Article 11 of the International Covenant on Economic, Social and Cultural Rights<sup>20</sup>, reaffirmed by the UN High Commissioner for Human Rights in August 2007<sup>21</sup>. Incorporating the right to water and sanitation into national laws, backed up by specific measurable plans, will build accountability and political will. Access to safe affordable water and sanitation then becomes an entitlement around which all people, including women, children, the poor and marginalized, can mobilize.

However, even where the right to water is legally recognized poor people may still need access to justice in order to protect them from illegal cut-offs.

95. Inclusiveness and social mobilization result in effective partnerships. Changing from the traditional delivery-oriented approach to one that internalizes the demands and voices of the poor results in the scaling-up of successful, sustainable, targeted and often cheaper community-driven approaches, that also contribute to the building of accountability and effectiveness, e.g. Agua Tuya initiative in Bolivia, and the work with the municipal council in Kitale, Kenya. This requires major changes in the way service providers, governments and investors work, but there are good examples in the developing world.

#### **Addressing sanitation issues concertedly**

96. The neglect of sanitation needs to be reversed. Senegal set an example in 2004 by becoming the first country to establish a Ministry for Prevention, Public Hygiene and Sanitation, to coordinate sector activity<sup>22</sup>. Positive political will is being generated by the UN International Year of Sanitation. Civil society has a mobilizing role to play, such as in Bangladesh, where a Community Led Total Sanitation campaign changed political will of the Government, to recognize the right to water and sanitation and to fund a target of 100% sanitation by 2010. Coverage in Bangladesh has grown from 33% in 2003 to 81% in 2006 and the country is playing a leadership role in the region.

**Right technology choices**

97. While new infrastructure will be needed to achieve targets, equal importance should be given to investing in the repair and maintenance of existing infrastructure. Likewise, the contribution of water and sanitation technologies to other development objectives needs to be more widely acknowledged. Examples of community sand dam building technologies used in Sudan as a conflict resolution approach, rainwater harvesting to ensure food security and empowerment used successfully by the Water for Food movement in South Africa, gender responsive school latrines in India and Africa and their impact on girls' school attendance, terrace cultivation in arid regions of Africa and Latin America to improve the use of scarce water resources, micro-hydro electricity generation and more integrated initiatives such as the Nyamarimbira integrated water project in Zimbabwe are examples of simple technological approaches that have a broad impact.

**Implementing integrated water resources management**

98. IWRM policies need to be operationalised. IWRM roadmaps for planning and implementation can be a way forward. Every river basin and watershed needs an IWRM plan that empowers civil societies and the poor to input to water governance and that prioritizes demand management. National standards and principles for allocation of water among competing users must be established. There is a need to deepen understanding of the tools to

measure sustainable water resource use, e.g. water footprints, virtual water and consideration of specific hydrology of rivers.

99. Recent water reforms in Nicaragua, South Africa, Mexico and Kenya recognize the environmental and social needs of rivers and include new allocation and rights regimes to manage the water resources and to incorporate water users. Other countries, such as Costa Rica, Guatemala and Honduras, are attempting to reform their water laws.

**D. Emerging and future challenges**

- **Climate change** - Water is the key to climate change adaptation and we should focus on management of ground and surface waters, working at the community level to build resilience to floods and droughts. Rainwater harvesting is of potential for water-stressed areas and should be mainstreamed into national and regional policies.
- **International waters** - 263 rivers cross international borders, but 157 of them have no agreements for cooperation between states. The UN International Watercourse Convention sets minimum standards for peaceful management of international rivers but has only been ratified by 16 countries and is not yet in force. Without a universal set of principles, management and allocation of international waters becomes dominated by the largest economy in the river basin, and decisions are driven by political forces that do not benefit people and environmental principles.

Vast groundwater aquifers on each continent are being mapped and analysed, but much more work remains to be done.

- **Urbanization** - Rapid urbanization is putting considerable pressure on water and sanitation services, which if not addressed in time will make the achievement of the MDGs unfeasible.
- **Infrastructure projects** - As major water infrastructure projects must be consistent with the 2000 World Commission on Dams' guidelines and multi-stake holder consultations need to be encouraged in all nations and regions. Globally there is a re-emergence of large water infrastructure projects.
- **Agricultural changes** - An increase in agrofuels production will seriously affect water resources.

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<sup>1</sup> <http://www.agassessment.org>

<sup>2</sup> <http://www.foodsovereignty.org/new/>

<sup>3</sup> <http://www.fao.org/SARD/en/init/> ; <http://www.fao.org/sard/en/init/963/2952/index.html>

<sup>4</sup> [http://www.ifoam.org/about\\_ifoam/principles/index.html](http://www.ifoam.org/about_ifoam/principles/index.html)

<sup>5</sup> Kenya Livestock Working Group (KLWG) <http://www.sard-klwg.org/index.html>.

<sup>6</sup> [http://www.holisticmanagement.org/n7/who\\_07.html](http://www.holisticmanagement.org/n7/who_07.html)

<sup>7</sup> Definition given by the Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Desertification Synthesis*. World Resources Institute, Washington, DC.

<sup>8</sup> This is for example being done by IUCN.

<sup>9</sup> The French Scientific Committee on Desertification (CSFD) has already started evaluating the economic costs of non-action in terms of combating desertification (see [http://www.csf-desertification.org/dossier/dossier2\\_5.php](http://www.csf-desertification.org/dossier/dossier2_5.php)).

<sup>10</sup> UNDP, Human Development Report 2006: Beyond scarcity: Power, poverty and the global water crisis

<sup>11</sup> UNEP, Global Environment Outlook 4, 2007

<sup>12</sup> UNEP, Global Environment Outlook 4, 2007

<sup>13</sup> Joint Monitoring Project of WHO-UNICEF 2006

<sup>14</sup> Health: “In countries with high child mortality rates, diarrhea accounts for more deaths in children under five years of age than any other cause of death – more than pneumonia and more than malaria and HIV and AIDS combined. Education: “In Nigeria parents withdrew their daughters from school because they had to defecate in the open. In Uganda 94% of girls reported problems at school during menstruation and 61% reported staying away from school during menstruation

<sup>15</sup> WaterAid “‘Global cause’ and effect’

<sup>16</sup> UNDP, Human Development Report 2006: Beyond scarcity: Power, poverty and the global water crisis

<sup>17</sup> World Bank Water and Sanitation Programme 2007 Africa, Water supply & Sanitation in PRSPs; Benchmarking performance

<sup>18</sup> Global Water Partnership (2000) ‘Framework for Action’

<sup>19</sup> Efforts such as such as the ICLEI’s Water Campaign, the United Cities and Local Governments Committee on water and sanitation and those of national local government associations.

<sup>20</sup> Right set out in General Comment 15 to Article 11 of the ICESR International Covenant on Social Economic and Cultural Rights Article

<sup>21</sup> Decision 2/104 on Human Rights and Access to Water, the UN Human Rights Council

<sup>22</sup> <http://www.wsscc.org/en/what-we-do/national-level-activities/senegal/index.htm>